OLDEST BEE PAPER IN AMERICA

THE AMERICAN BEE JOURNAL

ESTABLISHED IN 1861

VOL. XIX. CHICAGO, ILL., JULY 25, 1883. No. 30.

THE AMERICAN BEE JOURNAL

Published every Wednesday, by

THOMAS G. NEWMAN,

EDITOR AND PROPRIETOR.

Rectangular vs. Square Frames.

In this issue of the BEE JOURNAL, will be found two articles on the advantages and disadvantages of square and rectangular frames. The former finds an able advocate in Dr. E. B. Southwick, of Mendon, Mich., while the latter obtains competent support by the pen of Mr. G. W. Demaree, of Christiansburg, Ky. This is a good way of ascertaining the strong as well as the weak points of each shape of frame; and, in order to bring out the full arguments on each side, we shall allow *one* more article to each advocate, and then the matter will be left for the readers to decide, individually, as to which is the best frame for all purposes.

We do not intend to take any hand in the *argument*, at this time, for these two gentlemen are quite equal to the task, and will do justice to the subject. But a few remarks of Dr. Southwick, on page 369, bearing on the editor of the BEE JOURNAL, demands attention. The Doctor remarks as follows:

"I think that the editor of the BEE JOURNAL is as unfortunate as Mr. Doolittle, when he tries to excuse Mr. A. I. Root for such assertions, but I suppose he wanted to keep up the reputation of the editors for truth and veracity. I really believe that not one-fourth of those that use movable frames, use what is to-day considered the Langstroth frame, and that number is silently growing less in proportion."

The point in controversy is the statement said to have been made by Mr. A. I. Root, that "more Langstroth frames are used than all others put together." We certainly did not intend to offer any excuse for Mr. Root, or any one else who might make a statement similar to the above, for its *correctness* is certainly its fortification. Two years ago, just after the close of a very disastrous winter for bees, the editor of the AMERICAN BEE JOURNAL requested its readers to send in reports of how their bees were prepared for winter—whether they were wintered in the cellars, or out-of-doors; the kind of hives used, etc. From these reports a statistical table was prepared, and one of the facts brought out, was that "more shallow frame hives (Langstroths) were in use than all others put together." Among other remarks we then made the following:

"Those who have contended that the Langstroth hive is too shallow for wintering, will be surprised to learn that the figures compare very favorably for it. Thus the percentage of losses in all kinds of frame hives is 46; exclusive of the Langstroth hive it is 51, leaving only 53 for the Langstroth, being 8 per cent. in its favor. Again, this report records the results of wintering in 521,330 hives; 211,782 of which were in box hives, leaving 309,598 for all kinds of frame hives. Of the latter, 195,957 are Langstroth—*i.e.*, shallow frames—and 113,561 of all others combined. We really think these figures settle the matter of 'the coming frame.' Had the deep frames been shown to have the advantage, the BEE JOURNAL would have been ready to advocate their universal adoption, for it has no desire to favor any but the most successful methods, hives or implements."

According to the statistics then obtained of 521,330 hives, only three-fifths were in frame hives, and, of these, two-thirds were in the shallow frame or Langstroth hives. In other words—so far as any information has been obtained—more Langstroth (or shallow) frames are used than all others put together!!

Now, so far as our trying to "keep up the reputation of the editors for truth and veracity" is concerned—we accept the situation. Editors make mistakes as well as other mortals; none are perfect; but it *is* pleasant to think well of others' opinions—to feel that they *have* a "reputation for truth and veracity." We do not endorse the opinions of Mr. Root, Dr. Southwick, "or any other man," unless they commend themselves to our judgment! But we hope never to indulge in uncharitable words or feelings against any one for a frank statement or opinion, and, hence, we shall exercise this *generosity* towards Dr. Southwick, when he states that "not ¼ of those that use movable frames, use what is to-day considered the Langstroth frame, and that number is silently growing less!" The Doctor's statement is so far from the facts, as settled by the only statistics available, that we have here an excellent opportunity to let "charity cover a multitude" of errors! The remark about Mr. Root's judging from the orders he receives for regular sizes of frames and materials, is exceedingly *thin*. If there were so many who use the square frame, some one would surely start a "factory" and supply the demand, as Mr. Root, and others, have done for the shallow frames.

The Doctor is, naturally, jolly and companionable, and we cannot think he means one-half of all that his language *might* imply—at least we choose to take that view of it,—while we imagine that we discover the same "twinkle of fun" in *his* eye that he discovered in his good wife's, as she removed the stings from his face, and soothed his burning temples, with her loving hands.

☞ We acknowledge the reception of a season Ticket to the Southern Exposition, to be held at Louisville, Ky., during the month of August, and also a pressing invitation to attend the Kentucky State Bee-Keepers' Convention, and though it is very difficult for us to leave the office, we intend, if possible, to be there at least for one or two days.

The Rev. Dr. John Dzierzon.

Mr. C. J. H. Gravenhorst, a celebrated German writer, has given the following sketch of the life of the greatest living German bee-master, the Rev. Dr. John Dzierzon, in the *Bee and Poultry Magazine:*

The subject of this sketch was born on the 11th of January, 1811, at Lobkowitz, in Silesia, Prussia, where his father was a farmer. Dzierzon's father was an apiculturist, and it can be rightly said: Parson Dzierzon obtained his love for bees in the milk of his mother. Even in his boyhood, bees fettered his soul. From 1822 to 1833, he studied in Breslau. In 1834 he took the office of the chaplain at Schalkowitz. In 1835 he was called as a Catholic priest to Carlsmarkt, in Silesia, where he worked in blessed activity until the summer of 1869. Since that time he has retired from his clerical duties in order to devote himself thereafter entirely to his bees. He immediately founded an apiary in the garden of the parsonage at Carlsmarkt. The number of hives here soon grew too large, and then he erected additional apiaries in the neighboring village, so that he soon had 12 apiaries, occupied by 400 to 500 hives, and they called him "the Duke of Bees, of Calsmarkt."

In February, 1853, he introduced the Italian bee. He succeeded in propagating this race pure, and to diffuse it over all lands. At first he reared bees in ordinary hives. He invented the really most perfect habitation for bees, the hive with movable combs. After many attempts, Dzierzon built a hive not so long and higher, to make up for it, with a fixed top and floor, and a door at the side. Now he could easily take out and put in again the combs built in chambers; the hive with movable frame work was discovered, and as long as bees are reared, the name of Dzierzon must and will remain, in honor of this discovery.

By means of the hive with movable frame work, the bee became a domestic animal in the full sense of the word. Dzierzon became, by means of his hive, unlimited master of his colonies, for it allowed him an insight into the inmost portion of the life of bees, and, gifted by God, with a remarkable understanding, and with an unusual and keen observation and power of combination, he very soon perceived the wonderful life and motion of the bee hive.

Dr. Dzierzon set up a new and true theory of bees, which endured the fiery ordeal of practice and science, and in a short time became the healthy and solid foundation of a care of bees rational and comformable to nature. With the help of the Italian bees, the gifted master succeeded in silencing the last doubters of his theory, or in making them defenders of the same. His theory is briefly this: There are in a normal colony of bees, 3 kinds of creatures, queen, drones, and workers. The queen is the only perfect female in a colony; is impregnated only once in her life; and lays the eggs for all the forms of bees. She impregnates the eggs in the very laying, or else does not impregnate them at all. In the first case, queens and workers are hatched from them, in the other case, drones. These, the males, are virgin-born, *i. e.*, they are hatched from eggs that the queen lays unimpregnated, which she allows to pass contact with the drone sperm from her receptaculum seminis. The workers, that are hatched from impregnated eggs, are imperfectly developed female beings, which, in spite of these imperfectly developed organs, which admit of no fertilization by a drone, still under certain circumstances, can lay eggs, from which, without exception, drones only are hatched. The parthenogenesis is the doctrine of the virgin-born in the bee hive.

Dzierzon's name has penetrated to all parts of the earth, and he is every where acknowledged a great master, as is shown by the great number of domestic and foreign diplomas.

Since 1848, Calsmarkt has become the goal of pilgrimages of bee-keepers. What Dr. Dzierzon has accomplished for the cause of apiculture, can be learned from his books; but only Dr. Dzierzon himself can set the example of how we must love and investigate the bees. In no way has he done more for bee-culture than in this, that he had formed scholars, in whom his apicultural spirit, the spirit of observation and investigation, has been roused. His life remains sacred to his scholars and friends.

Kentucky Bee and Honey Show.

The Kentucky State Bee-Keepers' Association will hold its annual meeting in Louisville, Ky., Aug. 29 and 30, at the Southern Exposition building. We hope to have a large attendance of the bee-keepers of the State, and also of other States, both North and South, as the convention will be in session during the week of the Honey and Bee Exhibit. And premiums amounting to $60 are offered by the commissioners of agriculture of Kentucky, for Kentucky honey, and $40 by the Exposition, for the finest Italian bees in Observatory hives. The premium on bees is open to the world, and we hope to see a fine display.

The Bee-Keepers' Convention and Honey and Bee Show will be held in the same week of the great exhibition of fruit, for which over $2,000 in cash premiums will be paid.

We extend a cordial invitation to all bee-keepers' societies, to editors of bee publications, to honey-producers, and queen breeders, and all who are interested in apiculture, to be with us. We hope to have the father of modern bee-keeping with us, the Rev. L. L. Langstroth, to whom a cordial invitation has been given.

Reduced fair on all railroads, both North and South, will be offered to all who attend the Great Southern Exposition. It will doubtless be the grandest exposition ever held in the United States, in magnitude, and nearly equal to the Centennial.

N. P. ALLEN, *Sec.*

The National Convention.

The National Bee-Keepers' Association, will hold its Annual Convention in the City Hall and Council Chamber in the city of Toronto, on Tuesday, Wednesday and Thursday, the 18th, 19th and 20th days of September, during the second week of Canada's Great Fair. All the railroads in Canada will issue tickets during this week, good to return, up to Saturday night 22d, at single fare for the round trip. Special excursion rates will be arranged from various parts of the United States, of which due notice will be given. Those who intend being present may be kept posted on the latest excursion rates, etc., by addresssng me, and also that I may arrange hotel accommodation. Private lodgings will, if possible, be secured for those who desire it, and every effort will be made to make everybody comfortable. A grand meeting is anticipated.

D. A. JONES, *President.*

Honey and Beeswax Market.

OFFICE OF AMERICAN BEE JOURNAL,
Monday, 10 a. m., July 23, 1883.

The following are the latest quotations for honey and beeswax received up to this hour:

CINCINNATI.

HONEY—Extracted honey commences to come in freely, and a large crop is reported from all quarters. The demand is very good, and keeps pace with the arrivals. For choice extracted honey I pay 7@10c; the latter price for choice clover. I have received several nice lots of comb honey, for which we paid 15@16c on arrival.

BEESWAX.—Arrivals of beeswax are plentiful. We pay 32c. for a good article on arrival.

CHAS. F. MUTH.

NEW YORK.

HONEY.—Best clover in 1-lb. sections (no glass) 20@21c.; in 2-lb. sections (glassed) 18@20c. Fair quality, 1 and 2-lb. sections, 16@17c Extracted, white, in small barrels, 10@11c.; buckwheat, 8@8½c.

BEESWAX.—Is more plentiful. Prime yellow sells at 36½c.

H. K. & F. B. THURBER & Co.

CHICAGO.

HONEY—New crop of comb honey is being offered, and some sales of it have been made at 16@18c in 1 and 1½ frames. The receipts of extracted are liberal, and there is a good deal of complaint about unripe honey; consumers holding off. Market, 9@10c for white. Very little dark left, and some inquiry for it.

BEESWAX—30@35c.

R. A. BURNETT, 161 South Water St.

SAN FRANCISCO.

HONEY.—New extracted is arriving freely—selling for 7 and 8 cts. New comb coming forward slowly; extra white, 16c.

BEESWAX.—No beeswax in the market.

STEARNS & SMITH, 423 Front Street.

ST. LOUIS.

HONEY—Some new comb jobbing at 14c, but old do. nominal. Only a few barrels of extracted and strained sold within quotations—6½@7½c.

BEESWAX—Sold irregularly from 32@34c—mainly at 32@33c.

W. T. ANDERSON & Co., 104 N. 3d Street.

CLEVELAND.

HONEY—New honey has begun to come forward and with it a demand has sprung up. New white 1-lb. sections sell 19@20c; 2-lbs. more slow 17@18c. Old 1-lb. white, 18@19c: old 2-lb., 15@16c. Extracted has sold better lately, and all old stocks have been sold out at 8@9c.

BEESWAX—Not offering.

A. C. KENDEL, 115 Ontario Street.

BOSTON.

HONEY—Our market is fairly active. We quote: ½ lb. sections at 30c.; 1 lb. sections, 22@25c.; 2 lb. sections, 20@22c. Extracted, 10c. per lb. Good lots of extracted are wanted in kegs or barrels.

BEESWAX—Our supply is gone; we have none to quote.

CROCKER & BLAKE, 57 Chatham Street.

For the American Bee Journal.

Transferring—The Old vs. the New.

JAMES HEDDON.

By transferring, I mean permanently changing colonies from box or unsuitable hives, to better hives of other dimensions. Full and explicit directions for manipulating the old method have been so repeatedly given that it seems quite unnecessary to go over the ground here. We have been told all about how to cut open the box hive; how to cut out the combs; to brush off the bees; lay the combs of brood and honey down on to a board covered with woolen cloth; lay the frames onto the combs; cut the combs snugly inside the frame; slip the frame snugly over the comb; tie a string around the same, or tack on some sticks or clamp on some clamps, etc., etc., etc., and when the frames are filled, "hive the colony and the work is done."

The objections to such a plan are these: The different devices for fastening comb do not succeed in holding it in place at all times, especially if put in, in pieces. If not put in in pieces, the ordinary box hive and most worthless frame hives contain scarcely comb enough to fill three frames, and piece work forever after looks, and is bungling. More or less brood is destroyed; honey is leaked and daubed about. A colony thus transferred is not worth as much to me by several dollars as one transferred by the new method.

The old method of cutting out combs and fitting into frames, is entirely obsolete here. With our modern advantages such a course is far inferior to the one I am now going to describe. First, let me say that I considered it a great error to hive a swarm of bees upon other than straight all worker combs, or full sheets of comb foundation, securely stayed, which will be these combs in 48 hours.

When we are buying bees we prefer combs naturally built in empty frames, to those that are transferred. Again, we very much prefer combs drawn from full sheets of foundation to either. No matter how nice the combs may be in the hive I transfer from, I proceed as follows:

About swarming time I take one of my Langstroth hives, containing eight Given pressed wired frames of foundation, and with smoker in hand, I approach the hive to be transferred. First, I drive the old queen and a majority of the bees into my hiving box. I then remove the old hive a few feet backward, reversing the entrance, placing the new one in its place and run in the forced swarm. In two days I find eight new straight combs with every cell worker, and containing a good start of brood. Twenty-one days after the transfer, I drive the old hive *clean* of all its bees, uniting them with the former drive, and put on the boxes, if they are not already on. If there is any nectar in the flowers, the colony will show you box honey. About the queens: I usually kill the forced queen as the bees run in.

I run them together as I would one colony in two parts. Now to the old beeless hive; of course there is no brood left, unless a little drone brood, and we have before us some combs for wax, for more foundation, and some first-class kindling wood.

If you have no method by which you can use a full hive of frames, of full sheets of foundation, running a full swarm into them at once, by all means procure it without delay.

But if any one has a mania for cutting up combs, and fitting them into frames, by method given above, does not prohibit them using all the straight worker comb the old hive contains, after first extracting the honey from them. Should any one wish to increase his colonies at the same time they transfer, the following deviations from the above are only necessary. Run the second drive into another hive of full frames of foundation, and use the old hive as before.

Now, that we have got foundation perfected, so that the bees will draw the lines or side walls to full breeding depth, in from two to three days, why fuss with the old comb from the old hive?

Having once experienced the above method, I shall never go back to the old one. All of you know what a nuisance a few odd sized hives are in the apiary, also some who have just started, wish they had adopted some other style of hive. The above method of transferring, will, in my judgment, get all such out of their trouble.

The cost of foundation, and new hives, is fully made up by the better combs, and you have the change to better style of hive, thrown into the bargain. I have thoroughly tested the results of the plan herein described, and am speaking from experience.

My method of fastening securely full sheets of foundation, is by making it in wired frames with the Given press. Those who have but very few colonies and consequently cannot yet afford a press, can wire their frames and hand press on ready made comb foundation.

Dowagiac, Mich.

For the American Bee Journal.

Bee Items from Australia.

A. VERGE.

In the expectation that some reader of the BEE JOURNAL may be able to advance a reason, I ask the question, why do bees worry and throw out their hatching brood? I began the season of 1882 with 11 colonies, in Langstroth hives, and, not desiring increase, I attempted to prevent it by removing frames of brood to less vigorous colonies, and cutting out queen cells; but the bees appeared dissatisfied with such arrangements, and did no work in the sections. They continued the process of queen cell building, and whenever a colony became populous enough to work in the sections, then also occurred afresh a desire to swarm. However, I continued to cut out cells, and remove brood, till the season had advanced so far that it was very certain swarming must be over for the year.

From January 1st to the end of February, showers of rain fell almost every day, and during all that time and afterwards they employed themselves with worrying and throwing out the hatching brood. To such an extent was the destruction carried on, that I had to unite colonies, and now I have only three which were left strong enough to store sufficient supplies for the winter. The dead bees cover the ground below each hive; in some cases over a space nearly 15 inches square, and in the middle to the depth of an inch—the odor from them being quite disagreeable at a distance of several feet.

At first I thought it might have been brought about by my having checked their desire to swarm, but I noticed that the bees in each of the four common box hives in another part of my yard, were engaged in the same way. Then I concluded that, owing to the rainy weather, the store of honey which they could collect was insufficient to supply the wants of so much young brood, and that they took this course as the surest way of checking the drain upon it. But, as there were thousands of acres of white clover immediately around, and any quantity of flowers from forest trees, with no other colonies within 3 miles to share the supply, I find it difficult to believe that so few colonies should have been unable to collect sufficient for themselves.

In order to increase the honey resources of this place, I have introduced several bee plants. Besides a few rows of white sage and horsemint, I have a small plot of catnip and sweet clover, the produce of seed supplied in January last by Mr. A. H. Newman. These are growing most luxurantly on river-bottom land, while some that I tried on hill-land with a stiff clay subsoil, at a depth of 12 inches, did not thrive at all; in fact, in spite of continual waterings, there are not now to be seen more than half a dozen wretched plants, about 3 inches high, out of a plot of 12 feet square. I think it pretty certain that in this region, sweet clover will require the same depth of soil as does lucerne (*alfalfa*). Of course it would grow on a poorer soil, but it could not produce much stalk or flowers. My trial, however, was somewhat severe, because in a soil not deeper than 12 inches, and under our summer sky, no sufficient moisture, in spite of frequent surface watering, could be present below the top for the nourishment of the plant while tender. Probably if planted on the same kind of land in the fall, it would gather strength enough before the following summer to withstand a long period of dry weather.

I shall have other opportunities, I hope, of reporting upon it; in the meantime I shall plant it upon bottom land, and though in such soil it grows so rapidly as to justify a little apprehension that it may really merit the appellation of "weed" bestowed upon it by some bee men, yet I think it can hardly become such a nuisance as are the worthless weeds which annually overrun these lands, and from which it seems to me, there springs at intervals of time, new varieties of vegetable pests never seen in previous years.

New S. Wales, Australia, June 8, '83.

For the American Bee Journal.

The Best Size of Frame.

E. B. SOUTHWICK.

MR. EDITOR: As I understand that my proposal concerning a "standard frame" has been accepted, I will proceed to fulfill on my part. As a preliminary, I will give the difference in reliability between theory and experience.

Theory founded by correct reasoning from scientific or known facts, always works the same under the same circumstances, while experience only shows what has been done once, not knowing what may be the real cause, but is no sure guide to what may be done again. For example: One year I learned by experience that I could break up a laying worker by dividing the colony and giving each part, a ripe queen-cell. The next year I learned, by experience, that I could not do it. We find, especially in bee-keeping, that we learn many things by long experience, that we learn afterwards are incorrect. Experience shows us consequences without causes, while properly formed theories show us the bottom facts. In forming my theory of frames, I intended to use such facts as are well known to every bee-keeper.

Concerning frames and what they are called, I will say I think that Langstroth's inventions included all frames that were made separate from the hive and separate from each other, and consequently movable. So to Langstroth belongs the honor of inventing the movable-frame, whatever size it may have, but when he put out his book, he made a certain size his frame, others made a certain size their frame, so they came to be called each size after the man who first used or chose them, thus Langstroth's frame, Gallup's frame, etc., while they are really all the Langstroth frame. In this article I shall only consider the square frame in comparison with the long and shallow one, without regard to size.

The first object of bee-keepers and bee-keeping is to rear bees fast, and fill the hive with bees, at the proper time, in the quickest time possible; the second, is to get the most honey, and in the best marketable shape, and third, to comfortably and successfully winter them.

It is a well-known fact that the largest amount of matter can be protected by the least amount exposed on the surface, in a perfect sphere. The bees are philosophers enough to know this, for, when there is no obstruction in the way, and they desire to protect themselves from outside exposure, they assume that form, and in the centre of that sphere they commence to build their comb, and there they commence rearing their brood, and from this centre they extend their comb-building and brood-rearing in every direction, keeping up the same spherical form, as nearly as possible, depositing their honey and pollen close outside the brood nest, where it will be convenient to feed; and when it is fed out and more eggs are deposited, more honey and pollen is deposited outside of them. And so it goes on, until the capacity of the queen is reached.

Now, if we place obstructions any where, so as to prevent their working in this spherical form, we retard their progress, by crowding them in some othor direction, and thus exposing a greater amount to the surface, and obliging them to retain more bees at home to keep up the extra heat and do the extra work that they would have to do, in cleaning and waxing up the extra surface they would have. All this extra retention and work is brought in when their best effort should be put forth to rear brood and fill their hive with bees. Need I say that a square frame, and just enough to make a cubic space, is the best? Cannot any person with half an eye see that no frame with right angles can be as good as the square frame.

Now, for the second object: The bees in the square frames have their room filled with brood, but they have some room in the corners of the frames to put in honey and pollen for the brood, and as that is over some part of this sphere, it is always warm, the wax is easily manipulated, the comb is quickly made and filled, and they are ready to go into the sections with honey alone, for they have deposited pollen below for the brood.

In the shallow frames the bees have been crowded out of their natural sphere at a loss, as I have shown, of heat, labor and brood, and the honey and pollen they now bring in has to be stored at the ends of the frames, for the brood goes to the top, and as it is much cooler out there, it will keep more bees from the field or other work in this part, to keep up the heat so as to enable them to work the wax and make comb, and their work must go on much slower than in the square frame, and if kept without the sections until filled up, they will be found to be much behind those in the square frame.

But we will put on the sections. The bees from the long frames go in with a rush, frequently deserting the ends of their combs; and as they find a chance to restore the equilibrium of their sphere, they go to work with a will, making combs in the sections, filling them with honey and pollen, and the queen entering into the spirit of the rest, walks up their and deposits her eggs, thus spoiling many sections of fine honey. I have heard shallow-frame men say that queens did not bother them that way, but when I hear one of them inquire of another how he keeps the queen out of the sections, and find thousands of those zinc bee strainers—I do not know what else to call them—advertised and sold, I conclude the queen does go up; and if she is kept down by that zinc honey-board, it does not prevent the bees from depositing pollen in the sections which is nearly as bad as brood. When the sections are put on the square frames, the bees go into them as they require the room, and as they have room near the brood for the pollen, they seldom deposit any in the sections.

It is claimed for the shallow frame hive that it is better for comb honey. Let us see, I have shown that there is not as much heat accumulated in the shallow frame, and that they require more. The square frame would have much more heat to spare, and, consequently, would warm more room than the shallow frames; and on our tiering-up principle, I have never found any trouble in getting bees to go up, if it is only warm. Considering all the facts in the matter, I can but conclude that a proper arrangement over the square frame hive is better than an equally good arrangement over a shallow frame hive; besides, the sections over the square frame, if the arrangement below is right, are seldom visited by the queen, or any deposits of pollen are found in them.

The last object is to winter the bees successfully. The same reasons why the square frame is best for brood-rearing are equally good for wintering. The power to economize heat, and a chance to go into a natural spherical position, is all a frame can do toward wintering, and as the square frame does that, and the shallow frame does not, the square one must be the best for wintering. I will notice a few of the reasons given for using the long, shallow frame:

"Bees occupy the sections sooner." That is so; but I think I have shown that to be a fault, for the work done early in the sections ought to be done below, that the sections filled by prematurely entering them, and many more, are spoiled by brood and pollen.

"Bees have less distance to go to get to the sections." Let us see; take a frame 12 inches square, and you have 24 inches by the frame to the farther section on it, then cut the frame horizontally in the middle, and place the top half, back of the lower, and you have 30 inches, by the frame, to get to the back section. How is that for distance?

"The Langstroth frame is the most economical." Every one knows that it takes less material to go round a square, with equal sides, than one with unequal sides, both containing the same number of square inches.

"A majority of men that keep bees use it." This, in itself, would be no reason, if it were true (we all know that all our improvements have started with a minority), but I am satisfied that it is as false as I have shown the other reasons to be, for I have taken much pains to inform myself, when-

ever I have met bee men, whether in convention or elsewhere, and I have come to the conclusion (mind I do not state this to be a fact, as our Langstroth frame men have what they have said about it; and let me here say that when a man makes a statement for a fact, which he does not know to be a fact, I consider it but little better than though he knew it was false) that not one-eighth of the bee-keepers of the United States and Canada use Langstroth's frames, and when I say Langstroth's frame, I mean both of those sizes, that ¼ inch of which has taken up so much room in the BEE JOURNAL.

I think the editor of the BEE JOURNAL is as unfortunate as Mr. Doolittle, when he tries to excuse Mr. A. I. Root for such assertions, but I suppose he wanted to keep up the reputation of the editors for truth and veracity. I really believe that not one-fourth of those that use movable frames, use what is to-day considered the Langstroth frame, and that number is silently growing less in proportion.

Occasionally we find a man changing to that side, probably because he thinks he is getting on the popular side. Mr. A. I. Root boasts that he has obliged some one to adopt the Langstroth hive, not because it is the best hive, but because he cannot get supplies for the best one.

The many letters I have received asking for samples of my hive, some from men who have the Langstroth hive, and my observation generally convinces me that the "blow" is over, and the swells are becoming gradually less, and the undertow will eventually carry the Langstroth hive all out to sea.

I would not wish to convey the idea that these men wish to misrepresent or state anything not true, for I think they believe all they state, and the reasons are these: They make and keep on hand the supplies for the Langstroth frame and hives, and say "if you want any other you must wait until we can make them." The result is, that those who use others than the Langstroth frame supplies, either make their own, as I do, or send elsewhere for them, and the very few orders that A. I. Root gets out of the vast amount used, not of the Langstroth frame class, causes him to say, "More Langstroth frames are used than all others put together." Judging probably from the orders he gets, I presume that it is from them he judges, for I have about concluded that he sometimes thinks that himself and customers are all there is left of bee men. Considering his opinion was formed as above (and I can excuse him in no other way), it proves to me that the Langstroth frame is in a very small minority of the whole.

"They are so easy to manipulate." Now, I will digress a little, and give some comparative experience in the manipulation. Having a large colony in a Langstroth hive, I concluded they must have some honey to spare, so I took my tools and went out to investigate. I removed the cover and cloth from the top, and smoked them plentifully with my big smoker, which is not of the simple or simplicity kind, such as Mr. Root hires debased men with to quit debasing and try to be somebody, but one, that after using the biggest Clark's I could find for a year, the village tinner and myself made one just to my liking. I then attempted to raise a frame of sections. I pried it one way and then the other; then tried to pry up and pried off the top bar. I placed it back, and then pried each frame separately as far as I could, from the centre one, and I crowded that one way and the other, until I thought I had it loose. By this time the bees had begun to come up. I gave them a good smoking and then took hold of the frame with both hands near the ends, and pulled steady. But it did not come, I pulled a little harder and thought it came a little; I tried again, it appeared fast, jerked a little on each end, wiggled it side wise, and by wiggling, twisting, jerking and pulling, I succeeded in raising it up, so that I could see there was some very nice honey in the sections. This gave me new courage, and I went at it with renewed strength. Just at this time an investigating bee struck me on the nose. I looked for my smoker. It was sending forth a stream of smoke sufficient to engulf the whole colony in five seconds if I could have directed it; but I could not. Both hands were engaged, and if I let go I would lose all I had gained. But I was not to be beaten out by one bee, so I wiped him off on my arm and continued the jerking, but as the bees came out thicker and faster, and all appeared to come directly for my face, and sting immediately on arrival, my thoughts were soon turned, not "on peace," but "war to the knife," until I subdued the bees. I dropped the frame, it went down with a thub; I seized the smoker and gave them such a charge as sent all back to the hive or somewhere else, that were not busy on my face trying to pull out their stingers. I covered up the hive and left for the house. I did not swear, but I said "Oh, my," frequently; and when I got into the sitting room, and threw myself into the big chair, I uttered an "Oh, my," which gave all that heard it to understand that I was not the happiest man on earth.

My wife came in, with a tear of sympathy in one eye and a twinkle of fun in the other, and commenced to do what the bees, in their hurried departure, neglected—to take out their stingers. She got out all that she could find, bathed my face with ammonia, and advised me to go and lie down. Well, I have long since learned that it is sometimes better to take my wife's advice (but I never own it). So I laid down and there considered the great pleasure and ease in manipulating bees in the Langstroth hive, and after concluding that if I could find a man fool enough to invest 5 cents in such a hive with at least 50 pounds of honey, I would dispose of that colony. The pain decreasing as the swelling increased, I soon went to sleep. Oh! blessed state of unconsciousness. When called to supper, I was enabled by rubbing, pricking and punching to get one eye open so as to find my way to the supper table; and I sat down a perfect laughing stock for the whole family, which amount to only ten when no outsiders are present. Well, I got over it; but not so with the bees, for I called to my aid some of that stuff the good old minister used to use to make us boys good, "fire and brimstone," and with it silenced the bees, took away the honey, and with an axe, made kindling wood of the hive.

Again, I started for the apiary, took my tools, and this time went by the way of my wife's flower garden. She was there pruning some, and enjoying their beauty and fragrance. She asked me to go in, but no, I was in a hurry going to work at the bees, and observed, I thought there was too much time spent already with flowers. Yet I lingered until she picked me a small bunch of sweet scented roses and tied them together with some striped grass, and as she handed them to me said, "Now hurry along or *you* will spend too much time with the flowers." I took them, took a sniff at them and passed on, feeling a little rebuked, but said nothing.

As I passed along, I took up a stool that I use when a little lazy, while over-hauling a colony. I went to one that I thought had some honey to spare, sat down on my stool at the back of the hive, took another sniff at my flowers and laid them down on a hive to my right, removed the cover and cloth from the one before me, blew a little smoke into the top, just enough to inform the bees that I was there, then removed the back end board of the upper or section-honey department of the hive. The first frame of sections was not all capped, so I took it out and put it on the grass. The next I noticed was filled and nicely capped. I also saw that they had built comb from the lower side of the section frame to the upper bar of the brood frame. I took my long knife, that I use in uncapping, and cut it loose, close to the section-frame, then with my left hand took the frame back and out, and with the thumb nail of my right hand, pushed off the separators (these are the separators that Root and Miller told me would not stay. Well, if I used the Langstroth hive, I should want them spiked on, and the section frames bolted together, but I do not). I put the frame down on the ground, to let the bees fly off, and in the same way proceeded to take off four more frames, which were all that were capped over. I then cleaned off the comb the bees had built between the brood frames and sections, put in five new frames with new sections containing white clover comb, that I had made to order by the bees last fall for starters, and the same separators that were on the others, then the first frame and end board, the cloth and top, and all was right again.

I then took each frame of honey that I had taken off, brushed off what few bees remained on them,

and placed them in a box near by, for that purpose. I then took my seat again at the rear of the hive, took out the end board of the breeding apartment, took out a quantity of brood combs, cutting them loose with the knife at the sides, and found them nearly all filled with brood; so much so that the queen had little or no room to lay. This would not do. They would swarm and thus stop the surplus honey gathering. So I selected three combs with brood and bees, examining them closely, to see that the queen was not on them, put them to one side, and filled the space they occupied with new frames of foundation, made on the Given press and nicely wired in, not with wires from upper corners to centre of bottom bar crossing the upright ones as in Langstroth frame, but with upright ones alone.

All were taken out and put back with one hand, holding the smoker in the other, ready to give any bee that showed fight a puff. Well, they were put in, and the hive closed, by putting in the end board. I then took the three extra frames of brood and bees in one hand, and the smoker in the other, and went to a hive where I had put in half a dozen similar frames before, put them in and gave them all a good smoking, and then went back to my stool, took up my bunch of roses, and as I sat there noticing the different speed with which bees leave and return to the hive, and sniffing at my roses, the supper bell rang, so I gathered up my tools and started for the house as happy as a president.

One thing more and I have done—persuading all to use one size frame and the benefit of the same. I would as soon undertake to unite all religions under one creed as to unite bee men in using one size of frame; and anything so very improbable, it is folly to undertake. It would be some benefit to the dealers in supplies and bees, but very little to the honey-producer. For instance: A man has more colonies in the fall than he wants. He, perhaps, could sell them if his frames were right for $6, but it is seldom he can. If he killed his bees, his hive would be worth $2, the combs $1, and the honey that would go with them, when extracted, at least $4 more; so he would really lose $1 in selling. But right here some tender-hearted brother or sister will raise their hand in horror at killing the bees. Is it worse to kill them than to let them die through neglect or ignorance? I will relate a little circumstance to illustrate. As I was killing some bees I did not want, a very good man was present. He told me it was all wrong; that after they had worked for me all summer, then to kill them, it was wicked, and the sin of it would come up against me hereafter. I said nothing, but waited my turn. A few months after, I was at his house. He was butchering a cow. I asked him how old the cow was. He replied that she was 17 years, and that she had been the best cow he ever saw; that she had furnished his family milk and butter for 15 years—my time had come. Says I, deacon, will you, after a cow has helped you support your family for 15 years, now kill her and eat her up. It is awful; it is wicked, and it will come up against you hereafter. He said he would have to give in to my "right of might, for self-preservation."

Mendon, Mich.

For the American Bee Journal.

Square vs. Shallow or Deep Frames.

G. W. DEMAREE.

The movable frame is not a "fixture" in the sense that the apiary house, and the hive or tenement of the bees, are fixtures. The movable frame is simply an implement employed in the hive or tenement to manipulate the inmates of the hive, and to aid in the production of honey.

Viewing the matter from this standpoint, there is no great probability that any one particular form or size of frame will ever be accepted as a "standard frame" by the great mass of bee-keepers scattered all over the American continent, so varied in climate, as well as in other respects bearing on the occupation of bee-keeping. The facts show that there is an unlimited number of sizes of the movable frame in use, yet there are but two "forms" of this greatest of all the implements of the apiary, viz.: the Langstroth shallow frame and the square or deep frame. The issue to be described in this controversy is, which of these two "forms" is best adapted for all purposes in the culture of the honey bee, and in the production of comb and extracted honey.

I unhesitatingly take the grounds that the Langstroth or shallow frame carries with it more good "points," and is, therefore, better adapted for all purposes as an implement in apiculture than any frame yet invented. I regret that in presenting the evidence in behalf of the Langstroth or shallow frame, it does not go before an impartial jury as a whole. Some have already made up their decision, while others are moved by self-interest and prejudice, nevertheless there are many fair-minded apiarists who can appreciate facts and arguments, and to such I appeal. In the first place the size and shape of the frame used will necessarily govern the form and size of the domicile in which the bees must reside and carry on their handy work. I regard this as matter of much importance. The Langstroth or shallow frame is adapted to a hive with a low, broad brood-chamber, which gives a broad and firm base or foundation to the hive, such a hive sits firmly on its stand, is less liable to be over-turned or shaken by high winds, is less easily jarred, admits of two or more stories without becoming too tall and slender in proportion to its base, as is necessarily the case when a square deep frame is used. Such a hive looks better; proportion is always pleasing to the eye, and is better for all purposes for the reasons given than the tall, slender, bee-gumish looking hive which must be construced to accommodate the square or deep.

MECHANICAL CONSTUCTION.

The Langstroth frame being shallow, is more easily made square and free from wind than a deeper frame is. A little "winding" in the frame does not effect its position in the hive as is the case with a deep danggling frame. The hive itself being shallow, will vary less by slight mechanical inaccuracy, and if the old-fashioned porticos are left off, as I would advise in all cases, the hive is the most simple in mechanical construction.

THE BEE HIVE AS A DOMICILE AND WORK SHOP.

The bee hive answers the two-fold purpose to its inmates, for a residence and a factory or work shop. The Langstroth frame as an implement of manipulation for the convenience of the bee master, and to put the internal working of the hive under his control, admits of a structure best calculated for these purposes. Its broad base admits of free circulation of fresh air; every part of the lower floor is handy and convenient to the work going on above. The stories of the hive being low, less distance must be traveled to reach the highest part of them. The honey bee is the most sensitive of all creatures to the slightest jar, and no form of hive protects them so well from this annoyance as the Langstroth hive with its broad base and low stories. For this reason the combs are less liable to be fastened together with cross ties of wax, and propolized at every point.

A low brood-chamber, if the cover to the hive is double with an air space between, as they should always be in winter and summer, is less effected by the heat of the summer sun than a tall one is. I have never seen a single comb that had been injured by the heat of the sun in a Langstroth hive, while I have seen, in transferring from tall box hives, many outside combs that had been melted down by the sun's heat. A low brood-chamber is best adapted to the "tiering up" system of manipulation of bees for the best results. No one will deny that the Langstroth or shallow frame is best adapted for this purpose. Some apiarists tier up the Langstroth hive to three stories or more to accommodate large colonies.

Now, let us take a practical look at the two "forms" of hives which must be used to accommodate the two "forms" of frames.

The Langstroth hive, if tiered up to three stories, is 20x16¼ inches on the stand, if made of 1 inch boards, and 30 inches high if we allow 10 inches for each story. Of course I do not pretend to speak accurately here as to measurement. It will be seen that the Langstroth hive, even when three stories high, is quite well proportioned as a building. Now, let us look on the other picture. A hive made to accommodate the square frame in ordinary use, is about 14 inches square at the base, and if tiered up three stories high, will be at

least 3 feet in hight. Of course such a hive is out of all proportion. Some may not wish to "tier up," but many of us do, and it is a question of "all purposes" we are discussing, and adaptability to the "tiering up" system is an important point in the "all purposes."

EASY AND RAPID MANIPULATION

is a matter of the greatest importance in a large apiary. Every skillful manipulator of bees who has experience with the two forms of frames in use, can appreciate the Langstroth or shallow frame for ease and rapid handling. A shallow frame is quicker removed from its position in the hive than a deeper one is. The operator can see better what he is doing to the shallow brood department. The bees are less liable to be crushed or injured when manipulating the frames, and hence less liable to become irritated by rough handling.

The queen is now readily found in a shallow brood nest; in fact it is not unfrequently the case that the operator can tell just where the queen is by the movement of the bees when he first turns back the quilt.

A hive made to accommodate a long and shallow frame, like the Langstroth frame, successfully, gives a larger surface at the top of the brood nest for storing comb honey, and right at the point where bees do their best work.

A shallow frame, when used for extracting, is sooner sealed by the bees when full of honey, *i.e.*, the bees will seal a given number of square inches sooner in a shallow long frame than they will or can on a deeper one. It will be admitted that bees invariably commence to seal the honey at the top of the frames. There must be good reasons for this, and I judge the reason is, that evaporation goes on more rapidly at this point, and hence the honey is ready to seal sooner at the top of the apartment. So great are the advantages to be gained by the use of a shallow frame for extracting honey—for the reason given above—I have been induced to use a large number of frames just half the depth of the Langstroth frame, and of the same length, and these are used in tiers in the upper story, and so manipulated that the full ones are kept in the top tiers where they are sealed with the greatest dispatch. So good has been the results of this system of management in my apiary that I feel justifiable in the digression, if I have digressed. So strong a point do I consider the above in favor of a shallow frame for extracting purposes, that I believe no number of good points in a deeper frame can out-weigh it.

ADAPTABILITY FOR WINTERING BEES.

In my estimation too much has been conceded by the admirers of the Langstroth form of movable frame to the claims of those who advocate the use of a square or deep frame as best adapted for wintering purposes. I take the grounds that no form of frame yet invented is so well adapted to safe wintering of bees as the Langstroth form of frame is. It needs no philosophy to make it comprehensible that a room with a low ceiling is more easily and cheaply heated than one with a higher ceiling. The brood department of the Langstroth hive has this important advantage over a deeper one. The instinct of the bees lead them to store their honey at the highest point in the hive; they do this because nature has taught them that it is the best place for its preservation, as well as the safest place from their enemies.

Now, in a deep brood nest, if the combs are well filled with sealed stores, the bees must cluster on the sealed honey at the top of the frames, or they must dwell below the warmest part of the chamber until they eat their way up to the top, and if any of the stores are left below them in their upward march, the chances are against their ever returning for it during cold weather, if the supply should be exhausted above. When bees are wintered on the Langstroth frame, the cluster moves in a horizontal direction with the spaces between the combs, and pass the entire winter in the most congenial part of the hive. Bees winter better in a shallow brood nest than they do in a deeper one, simply because their stores are located in the warmest part of the hive, and in a room with a low ceiling, which is always warmer than a room with a high ceiling.

CONCLUSION.

I wish to conclude by saying that I have given my reasons for preferring a shallow frame, gleaned from personal experience with both forms of frames in use. The "movable frame" is as much an "implement" in apiculture as the plow or pitch fork are implements in agriculture, and, hence, each apiarist should act just as every intelligent farmer acts, viz.: use that which is best adapted to his branch of the business to his locality, etc., always guided by the light of his experience.

Christiansburg, Ky.

For the American Bee Journal.

Do Queens Mate More than Once?

I. P. WILSON, D. D. S.

The above question I supposed to be settled beyond dispute, and I was a little surprised at Mr. Hinman's article on page 357 of the BEE JOURNAL, claiming that queens do sometimes mate a second time.

That Mr. H. is mistaken about his queen mating with a drone after the first fertilization, I think there can be no doubt.

I will relate an incident that occurred in my own apiary, a month or two ago, which will show how easily one may be deceived, as Mr. H. doubtless has been.

I opened one of my best colonies, for the purpose of removing the queen to another colony. I found, on the second frame, that I removed a beautiful young queen, evidently about 3 or 4 days old. I felt greatly disappointed, as my choicest queen had been in this hive. I said to myself, "they have superseded her; what can it mean?" To determine how long she had been missing, I proceeded to examine the comb, and found, to my surprise, that eggs and larvæ were abundant. The old queen was still on duty, and I found her depositing eggs, here and there, as she quietly moved along over the comb. She was too busy to notice me or the rival queen. There was only one queen cell in the hive, and that was the one from which the young queen had hatched. Why they reared this young queen, and why the old queen did not object to the procedure is, to me, unaccountable. I removed the old queen to another colony, and left the young queen to take her place. A few day later, she mated. I saw her leave the hive, and in 22 minutes she returned with the unmistakable evidence of having made a successful "bridal trip." Now suppose I had not discovered this virgin queen when I did, but had opened the hive the day she mated, found the evidence of her just having mated, found also the eggs and the larvæ, and had not discovered the old queen, I might possibly have been deceived as Mr. Hinman doubtless was.

Burlington, Iowa, July 18, 1883.

For the American Bee Journal.

Few Items from the Pacific Coast.

J. D. ENAS.

Since I wrote about the young bees dying, or rather going away from the hives wingless, etc., we had a honey spurt, and the hives are getting filled. Bees preferred to fill the combs with honey instead of having them filled with eggs. Whether sections were on or not, they would fill the combs in the lower story to the detriment of the queen. I think they must have gnawed the young bees out, as they were not completed, wings not half formed; some were more perfect than others. No matter how often the bees were placed on the bottom board, they would go away from the hive. If they were put in at the top, they would soon be at the entrance. On one hive I had Root sections at the sides, not commenced on, two empty combs for eggs, the balance filled with brood and stores, but they preferred to fill the empty combs with honey, instead of letting the queen fill them with eggs, and would not go into the side sections, though they all had starters. I removed the side sections and gave more empty combs, and they are satisfied for the present. There are no more young bees crawling.

I saw a laying worker in the act of laying, to-day. I have a young queen in a hive that should have young bees hatching, but she is backward. To-day, on looking for her, I saw a worker, with its head in a cell, sipping honey, and from it came an egg just like as though it came from a queen. I watched it until the egg dropped on to the comb. I caught and caged her before she could es-

cape. She is a laying worker. I looked and saw no more. I think there are probably more, and that they have bothered the queen in her duties. The queen looks glassy, and very much the color of old robber bees.

I shall send the bee to Prof. Cook, with an insect that I caught killing bees. I have seen a second of the kind, but had nothing to save it with, and I would not like to put my hands to it. It is a regularly savage and blood-thirsty insect. I have it in alcohol. I caught it between the burlap covers, over the frames. It has very quick motions, and always faces the music on guard. I jumped for the bee, and it let its jaws into the bee's abdomen, and held it clear up in the air, and was walking off with it, when I stopped it. There must be more of them.

Queen-rearing has not been profitable this season, owing to losing many after being hatched, and even after laying. On opening hives to pick out a choice queen for a customer, the young bees would look all right, but the queen would be missing. The hive and colony would seem all right, though sometimes there would be no eggs, but cells. I handle bees carefully, not to kill bees nor queen in moving frames, etc. It was not for want of room, nor on account of swarming, as I had but a few swarms in the air. Before June, I could not always open a hive when I should, and the bees would destroy the cells.

Our honey crop will not be large this season. Many have had no swarms nor surplus, while some have taken 60 lbs. each from some few hives. The most I have taken, so far, from any one hive is about 75 lbs., most of it extracted. My bees increased from 23 to 72; have sold at different times, and now have 90 of 10 frames each, all strong and in good condition to stand the season of drouth, which will soon be on us in this vicinity. We had two days 102° in the shade. One day I thought all of my bees would swarm at once, but I raised the front, and in a short time the bees were all in their hives.

Napa, Cal., July 4, 1883.

What and How.

ANSWERS BY

James Heddon, Dowagiac, Mich.

☞ In reply to several inquiries, let me say, that valuable queens should never be introduced to colonies having long been queenless. They should be introduced in introducing cages, which we make by wrapping wire cloth around a stick one-half by seven-eights of an inch, and usually make them 4 inches long, with a plug in each end, and in such a manner that no wire points come inside the cage.

Diseased Bees.

I have got a colony of bees that I do not understand; they are bloated up so, and some of them get black; they lay around the entrance of the hive and die off very fast. I tried Mr. Hicks' cure for the disease, but it did them no good. They are Italian bees. I changed hives with them; the combs are clean and they have lots of brood.

JAMES GARDINE.

Ashland, Neb., July 16, 1883.

ANSWER.—I would have to see more of the phenomena you mention to give a satisfactory answer.

The colony may be robbing, and becoming demoralized, and so daubed with honey as to turn jet black. I am rather of the opinion that is the cause of the trouble. Follow up and see if you can find where they are at work.

Getting Straight Combs.

You say I will be "as successful as any one in getting straight combs if I manage properly." Please explain your method. W. B. DRESSER.

Hillsdale, Mich.

ANSWER.—I think that my success in getting combs built in sections so straightly that no separators are needed, is the result of the following conditions:

1. I use full size pieces of foundation, and such foundation as bees draw out readily, rather than build on to, perhaps beginning on one side and getting away ahead of the other.

2. I put these pieces into the centre of the section with that invaluable little implement known as Parker's comb foundation fastener, and it stays where I put it.

3. I place the hive plumb from side to side, and thus the foundation hangs true in the section.

4. I place all my hives declining toward the front.

5. The combs in my sections run parallel with those in the brood-chamber.

6. The narrow pieces of the sections are that width that the bee passages are ⅜ instead of ¼ inch, as is commonly used. This point is otherwise very advantageous.

7. The slats of my honey board are so arranged over the spaces between the top bars of the frames of the brood-chamber that bits of comb built up from said top bars cannot prejudice the bees in regared to crooking or side bulging the combs in the sections above.

8. The more of the brown German blood your bees possess, the quicker, whiter and straighter will they build comb.

Drones Variously Marked.

On page 344, BEE JOURNAL, Mr. J. O. Shearman asks me to answer the following: "Can a queen breed two kinds of drones at the same time? Or would it be called an indication that there might be two queens in a hive to see drones like pure Italians and pure blacks living together by the hundreds?" I do not know just what to credit to the word "kinds." Often drones go into neighboring hives and habit them the rest of their peaceful life-time. Then we see two kinds in a hive; but we often see the same "kind" of drones variedly marked, and I think such variations are much more radical among the drones of cross-breeding than among the workers. Many times I have seen drones that showed scarcely any yellow, side by side with brothers that were very yellow. Cross-breed bees are much more regular in action than in color.

Completing the Sections, etc.

Will you please answer the following through the "What and How" department of the BEE JOURNAL:

1. What per cent. of the whole number of sections used in your apiaries, during an average season, do the bees naturally complete?

2. Is the attempt to force the completion of boxes profitable?

3. What method do you use to accomplish that end when thought desirable?

4. What disposition do you make of sections partially filled?

FRANKLIN P. STILES.

Haverhill, Mass., July 13, 1883.

ANSWERS.—Let me say that the foregoing questions, I believe, are asked by a practical honey-producer of clear understanding.

1. As we never, at any time, allow our bees to become crowded for room, in the least, we have about one-third of the whole number of sections used during the season not sufficiently completed for market, when the season closes in September. We know that a different system of management would complete nine-tenths of them, but under such a system that nine-tenths would weigh no more pounds than our two-thirds.

2. I think it is generally understood that the attempt to force the completion of boxes has not been made a success, in the light of profit and loss.

3. We have never tried it.

4. When we remove our sections in the fall, we sort them over, and those not sufficiently capped to be readily merchantable, we uncap all the cells

that may be sealed; place them in a broad frame made for the purpose; hang them in the extractor, and throw out the honey, putting the sections of drawn comb back into the case, and put them away for next year's use.

In the fall, after extracting sections when recasing the sections of empty combs (as we use no separators), the combs are not always perfect in the frames; when we find one side a little fuller than the other, we put the two full sides together, and the hollowing sides together. No matter if the full sides of the combs should touch each other, when the bees begin operations the following season, they will cut right through, building out the other sides equally, and the occasional crooked ones are thus made straight.

In reply to several inquires received of late, allow me to append the following:

1. How to get the sections out of Heddon's cases.

This troubled us very much the first few days after using the case, but now we can remove the sections from our cases two or three times as fast as from any other arrangement. We invert the cases, four inches and a half above our honey table, the end pieces of the case just touching the rests made for the purpose. Now we have a solid wooden block scant 4 inches square and 12 inches long. This will readily slip through each department containing 7 sections. We hollow out one side of the block so that it will not bear any on the sections, except at the corners (the same object can be added to a block, by tacking on two little beveled strips). Lay this block across one row of sections, bring the palms of the hands down solidly and squarely on top of the block, one at each end; and the sections, block and all, will drop right through. (For a little handle, a shingle nail driven in will answer the purpose, in the middle of the upper side of the block, with which to draw it up.) Now you can slide the sections out from under the cases. This can be done in much less time than you have been reading this.

In emptying cases we usually drive all four rows of sections out, and then set the case aside. The honey will not break by the sections dropping this four inches, as they sort of slide out of their position, not having half an inch to fall.

SELECTIONS FROM OUR LETTER-BOX

Two Queens in One Hive.

Last evening I saw what I have long wanted to see. I examined a hive, where I had introduced a young laying queen, some 3 weeks ago. On the first comb I removed, I found my queen all right. On removing another comb, by the side of the first one taken out, what should meet my eyes but another laying queen. Now, I know two queens can do duty in one hive. I removed one of them to another colony that was queenless.

W. H. SHIRLEY.

Glenwood, Mich., July 19, 1883.

Large Honey Crop.

Our honey crop is very large and of the finest quality. We are having a great excess of rain. We cannot thresh our wheat (it is so wet,) and we fear it will be damaged in the shock.

N. P. ALLEN.

Smith's Grove, Ky., July 17, 1883.

Illinois as a Honey-Producing State.

I believe that we are largely creators of circumstances. As time rolls on we are drifted hither and thither, often by circumstances over which we have no control. A number of years ago I became infatuated with apiculture, and the longer I engaged in the business, the better I liked it. Keithsburg, Ill., where I was located, was one of the very best points for an apiary in the country; and when my favorite occupation promised to pan out big, I felt that I was enlisted for life in the sweet work. Unfortunately for my hopes and desires, I became sorely afflicted, and while all last season I worked hard in my apiary, there was not an hour that I did not suffer pain; and when the spring of 1883 opened, I became so completely afflicted that I was driven from the field of apiculture into the uncertain pursuit of health. In my wanderings I pulled up at this beautiful little city of four thousand inhabitants, where I studied the profession of medicine 20 years ago. My health is much improved, and I have reason for believing that I shall entirely recover. But I have no bees, and although I have enquired earnestly for a scientific apiarist in these parts, I have found none. There are a few box-hive and log-gum fogies, and I found one bright light in the bee world, who insisted that the drones laid all the eggs. There is a young gentleman about 3 miles from the city who is learning scientific apiculture, and will make a success of it, I think, for he is both intelligent and industrious. I do not know whether I shall stay here next season or not, but if I recover my health entirely, I shall have an apiary wherever I may locate. I am inclined to believe that Illinois is as good a State for honey production as there is in the Union. I shall work, wherever I may be, to extend the circulation of the AMERICAN BEE JOURNAL, for it will kill fogyism wherever it goes, and clean the cobwebs of superstition from the brains of all who read it. The JOURNAL comes to my new address regularly, and I read it with the enthusiasm that a boy does his first primer.

J. R. BAKER.

Warsaw, Ind., July 17, 1883.

Honey from Alfalfa.

In regard to California honey granulating, all the honey I have put up (some 19 tons) would candy by November or December, and some of the best became candied in warm weather. In giving a list of the principal honey-producing plants, in Cook's Manual, no mention is made of alfalfa, which is our main source of honey here. Last year 8,000 out of the 9,465 lbs. of honey which I put up, was from alfalfa. Since May 27, I have extracted 7,100 lbs. of alfalfa honey; and it is first-class honey too. P. LOUCKS.

Kingsbury, Cal., July 9, 1883.

[Alfalfa has often been mentioned as a honey producer. In the BEE JOURNAL for July 19, 1882, page 456, this paragraph occurrs:

Alfalfa yields a good quality of honey, and is in bloom every month in the year; it will grow without irrigation in any kind of soil, amongst stones, on such land as cannot be cultivated. Scatter the seed plentifully during the winter months, so that the winter rains may settle it into the soil and give moisture enough to cause it to germinate; keep sheep off the ground so planted, and let the alfalfa get a start, and nothing but gophers can eradicate it. Most persons think that alfalfa must have plenty of water at all seasons of the year in order to grow, but for bee pasture good results may be had from it without other moisture than that obtained from rain.

Of course it is an oversight of Prof. Cook's not mentioning it in his Manual; he will, no doubt, include it in the next edition.—ED.]

The Honey Harvest.

Every one keeping bees think that the harvest of honey will be good in this locality. There has been some quite severe losses since the gathering of last year's crop; but the bees that stood the storms are doing a fair business at present, although we have had it pretty wet, and it continues to be so, with the heaviest of showers, and as much of the dreadful cyclone as one would wish to see, having due respect for his house, bee hives, etc. Yet we have some very warm days between these great storms, and no cold days that would be considered wholly lost to the honey bee. It is my opinion that the bees are doing well on the clovers, and in 2 or 3 weeks buckwheat will be in, then they will be "the busy bees" in earnest. It is the great event always with us in this country. JOHN MORRIS.

Manston, Wis., July 13, 1883.

Honey Tree of India.

In December I was in Australia and saw a tree, a native of India, in bloom. Wherever I saw the trees they were covered with bees. I believe it to be the best honey tree I ever saw in any country. I have just returned from there and found the seed nearly ripe. I have made arrangements to gather seed. It is an evergreen, branches thick from the ground, grows a beautiful sugar leaf shape, although only a few years introduced into the country; I saw some nearly 30 feet high. I think it is a hardy tree and will live in your climate, and think it would be a valuable addition for bee and honey culture in America. I have lived many years in the United States.

EDWARD PARSONS.

Auckland, N., Z., June 19, 1883.

[The tree belongs to the linden family (*Tiliaceæ*,) so is a near relative of the most noted honey tree of our woods, the linden or basswood. It is, however, highly improbable that the tree can be grown in the United States; if so, assuredly only well South. The family is really a large one, but nearly all belong to the tropics, only represented in our country by one species.

Is it not evidence of botanical relationship which amounts to something when natives of opposite sides of the world, and in wholly different climates, thus possess similar properties? Last year a specimen of *sterculia*, introduced into the Southern States, was received for name, its honey qualities also being observed as excellent. Our linden is the nearest botanical relation of this tree too, and therefore the same remark applies.—T. J. BURRILL, Champaign, Ill.]

Bees in New York.

It is still wet here, and bees are getting little more than a living. We had a few days during which a little gain was made in the brood combs, but no work has been done in sections. I am glad to hear of good yields in other parts of the United States. Basswood will be in bloom in about a week, when I hope for better times. G. M. DOOLITTLE.

Borodino, N. Y., July 12, 1883.

Bees Hanging Out.

Why do some of our bees lie out so much? They fill the portico day and night. We have taken the honey and given them more sections.

J. L. HARRIS.

Griffin, Ind., July 17, 1883.

[They probably find it too warm in the hive for the numerous family, or there is nothing to gather. Give them a little ventilation by placing a small piece of wood under the cover, and they will go to work all right, if there is anything to do.—ED.]

Bees in Arkansas.

I wintered 125 colonies in 1, 2 and 3 story hives without loss. They never breed much before the middle of February. On the last of March I united them down to 100 colonies. March 15 brings us plenty of bloom, but our bees never gathered much honey, on account of cold weather. On April 1, the weather turned warm and dry, and a honey flow came from willows, clover and poplar. On May 1, every hive was solid with brood and honey. I extracted from 2 story hives, from 40 to 60 pounds; on May 20, we had a cold rain; on the 21st the thermometer, at day break, was at 35° above zero; frost was reported in low land, but no damage was done. On the 24th, our bees went to work again. On May 28, I extracted again about 40 pounds, from the 2-story hives. Now I could extract again, 40 to 50 pounds, from the second stories. Bees are working well now on sumac, and horsemint begins to bloom. For the last two seasons we have had no consumers among the bees; every nuclei has been built up to a strong colony and given a surplus. This year there has not been much swarming. Extracted honey sells from 8 to 10 cents per pound; comb honey 12 cents. I cannot make a large and full report. I had a crop planted, and I could not obtain the necessary help, but next year I shall become a specialist with bees. I send you a specimen of what is called here horsemint. It blooms from July 1 until frost, and grows all over this State. It is same mint as in Texas, please name it.

FRANK THIAVILLE.

Forest City, Ark., July 3, 1883.

[It is the horsemint (*Monarda*), and yields an excellent quality of honey. It is the principal honey-producer of Texas.—ED.]

Clover Honey Harvest Over Now.

The clover honey harvest is over now, and a busy one it was. We had good weather, with the exception of five days last week, which were too hot, and killed the last clover that would have kept the bees at work a little longer. But when I look at my honey, I am well satisfied for this year. I commenced with 23 colonies; devoted 3 for experiments, and, of course, the result was, not much surplus from them. I devoted 7 for comb honey; the result was about 250 pounds, in one-pound sections, an average of 36 pounds; not a very good result. Swarming is the cause; could I control it, I could do much better. From one Cyprian colony, devoted to comb honey, I obtained 5 swarms, but only about 12 one-pound sections filled nicely, and the honey in the brood department was well used up. From one colony that did not swarm, I got 66 pounds in one-pound sections; that is the best I ever did with one colony devoted to comb honey. Give me the cross of Italian and German bees for all purposes. From the 13 colonies devoted for extracted honey, I took 85 gallons, and can easily get 15 gallons more, to make it 100 gallons; but to do this I must take up the increase, for 25 colonies is about all I can keep here, in the city limits. But here I run against B. F. Carroll, on page 336 of the Weekly BEE JOURNAL. What does he call one who kills bees? He may say advertise and sell your queens. But I think after purchasing cages and paying postage, there would be very little left for my work. I might unite the bees, and board them until October, when they may die a natural death, from old age. Is it not strange that those standard frame advocates have not stated the greatest score against the Langstroth frame, namely standing the frame on end, when extracting?

LOUIS HOFSTATTER.

Louisville, Ky., July 13, 1883.

Bees Reveled in Clover.

Basswood is just coming into bloom. Bees have done well on white clover, considering their condition in April and May. I have now 282 colonies, and 18 more to hear from. I could not run an apiary of that size without clipping queen's wings. I have taken 70 pounds of fine honey from one hive of Italians, and think they have about 20 pounds more. I am extracting all clover honey, and marking the barrels so as to avoid mixing. I do not think it a suitable pursuit for an invalid to follow. WM. LOSSING.

Hokah, Minn., July 13, 1883.

Honey from Dog Fennel.

Mr. Enas, of Napa, Cal., asks if honey from dog fennel is poisonous? We get a good deal of honey here from wild camomile, which resembles the dog fennel of Tennessee, which is very bitter, but not poisonous. It loses the bitter taste, to some extent, but not entirely, after several months keeping. E. P. MASSEY.

Waco, Texas, July 13, 1883.

Bees in Alabama.

We have had a perfect drouth almost ever since April 1. Until the last 10 days, bees have scarcely gathered enough honey to keep up brood-rearing. But now the sourwood is just in, and it brought honey with it; bees are booming, and the honey is very white. Some ask when we can rear the best queens? We can rear just as good queens in one month as another, from April to September, provided our rules are carried out, viz.: plenty of pollen, plenty of honey, and plenty of bees. This has been one of the coldest and most backward seasons we ever experienced. We had frost in May. If there are any bee-keepers who wish to move South, there is room enough among our mountains; thousands of pounds of honey are wasting for the want of bees to bring it in. T. S. HALL.

Kirby's Creek, Ala., July 2, 1883.

Basswood Opening.

Bees have done very well up to the present week; this week has been too cool and wet. Basswood is just opening. J. I. PARENT.

Charlton, N. Y., July 14, 1883.

Comb Foundation.

MR. EDITOR:—I send you by this mail samples of foundation made on the Given press, in answer to Messrs. Bray & Seacord, of Warthan, Cal., on page 338 of the BEE JOURNAL. For thin foundation the only difference is the sheets are thinner; the work is the same after being sheeted. There is no change in machinery from heavy foundation to thin foundation. It works thick and thin simultaneously. Bees here are just waiting for something to turn up; just making a living. Thus far, the honey harvest in northern Texas might be represented numerically as follows: 000 pounds; if we have no change, two more naughts may be added, making it 00.000 pounds, surplus honey for 1883. We hope our Kentucky friends will remember us kindly at their coming convention. I am happy to greet America's greatest bee-master, Rev. L. L. Langstroth, again. He is our father in bee-literature.

WM. R. HOWARD.

Kingston, Texas, July 10, 1883.

[The samples are received; both the *thick* and *thin* foundation have very thin bases to the cells, and as both were made on the same mill, this full answers the query of Messrs. Bray & Seacord.—ED.]

Honey from Blue Thistles.

Our prospects for a good crop of honey were never better. The spring was late, but since settled weather came, the bees have built up rapidly. Swarming is in full blast. On Friday of last week, one of our box-hive-beemen had 8 swarms in one bunch. He hived the first swarm that came off on that day; seven others came out and clustered on the hive in which the first had been hived, thus making 8 swarms together. They were divided and put in 3 or 4 boxes. Have not heard how they were doing. My bees are storing honey rapidly from blue thistle. This honey is very white and of fine flavor.

J. W. CARTER.

Pleasant Dale, W. Va., July 11, 1883.

Dog Fennel Honey.

Last year I had some very late swarms that gathered a great deal of honey from dog fennel. The honey is unfit for use, having a bitter taste; one dose was enough for me. Two colonies had nothing but dog fennel honey to winter on, and came through as strong as any. Bees will not gather honey from dog fennel when there is anything else to work upon, though it blooms from June until October. There is an immense quantity of it in this country, making the fields look perfectly yellow.

W. S. DOUGLASS.

Lexington, Texas, July 16, 1883.

Died.—My little son, Wm. R. Howard, died of congestion, after a short and painful illness, on the 3d inst. Aged 3 years, 8 months and 26 days.

WM. R. HOWARD.

Kingston, Texas, July 12, 1883.

Special Notices.

Examine the Date following your name on the wrapper label of this paper; it indicates the end of the month to which you have paid your subscription on the BEE JOURNAL.

For safety, when sending money to this office get either a post office or express money order, a bank draft on New York or Chicago, or register the letter. Postage stamps of any kind may be sent for amounts less than one dollar. Local checks are subject to a discount of 25 cents at Chicago banks. American Express money orders for $5, or less, can be obtained for 5 cents.

We wish to impress upon every one the necessity of being very specific, and carefully to state what they desire for the money sent. Also, if they live near one post office, and get their mail at another, be sure to give us the address we already have on our books.

☞ Articles for publication must be written on a separate piece of paper from items of business.

Bee Pasturage a Necessity.—We have just issued a new pamphlet giving our views on this important subject, with suggestions what to plant, and when and how. It is illustrated with 26 engravings, and will be sent postpaid to any address for 10 cents.

Preparation of Honey for the Market, including the production and care of both comb and extracted honey, instructions on the exhibition of bees and honey at Fairs, etc. This is a new 10 cent pamphlet, of 32 pages.

☞ Do not send coins in a letter. It is dangerous and increases the postage unnecessarily. Always send postage stamps, for fractions of a dollar, and, if you can get them—*one-cent* stamps; if not, any denomination of postage stamps will do.

☞ When writing to this office on business, our correspondents should not write anything for publication on the same sheet of paper, unless it can be torn apart without interfering with either portion of the letter. The editorial and business departments are separate and distinct, and when the business is mixed up with items for publication it often causes confusion. They may both be sent in one envelope but on separate pieces of paper.

How to Create a Market for Honey.

We have now published another edition of the pamphlet on "Honey as Food and Medicine," with more *new* Recipes for Honey Medicines, all kinds of cooking in which honey is used, and healthful and pleasant beverages.

We have put the price *still lower*, to encourage bee-keepers to scatter them far and wide. Single copy **5** cents, postpaid; per dozen, **50** cents; per hundred, **$3.00.** On orders of 100 or more, we print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit. Try it, and you will be surprised.

Our Premiums for Clubs.

Any one sending us a club of **two** subscribers for 1 year, for the Weekly, with **$4,** will be entitled to a copy of Bees and Honey, in cloth, postpaid.

For **three** subscribers, with **$6,** we will send Cook's Manual, in paper, Emerson's Binder for the Weekly, or Apiary Register for 50 colonies.

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For **five** subscribers, with **$10,** we will send the Apiary Register for 200 colonies, Quinby's New Bee-Keeping, Root's A B C of Bee Culture, or an extra copy of the Weekly BEE JOURNAL for one year.

To get any of the above premiums for the Monthly BEE JOURNAL send double the number of subscribers, and the same amount of money.

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All who intend to be systematic in their work in the apiary, should get a copy and commence to use it.

For 50 colonies (120 pages).....$1 00
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☞ Do not let your numbers of the BEE JOURNAL for 1883 be lost. The best way to preserve them is to procure a binder and put them in. They are very valuable for reference.

Ribbon Badges, for bee-keepers, on which are printed a large bee in gold, we send for 10 cts. each, or $8 per 100.

Advertisements intended for the BEE JOURNAL must reach this office by Saturday of the previous week.

☞ We carefully mail the BEE JOURNAL to every subscriber, but should any be lost in the mails we will cheerfully send another, if notified before all the edition is exhausted.

☞ Constitutions and By-Laws for local Associations $2.00 per 100. The name of the Association printed in the blanks for 50 cents extra.

Special Notice.—We will, hereafter, supply the Weekly BEE JOURNAL for one year, and the seventh edition of Prof. Cook's Manual of the Apiary, bound in fine cloth, for **$2.75,** or the Monthly Bee Journal, and the Manual in cloth for $1.75. As this offer will soon be withdrawn, those who desire it should send for the book *at once.*

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☞ May we ask you, dear reader, to speak a good word for the BEE JOURNAL to neighbors who keep bees, and send on *at least one new* subscription with your own? Our premium, "Bees and Honey," in cloth, for one *new* subscriber to the Weekly, or two for the Monthly, besides your own subscription to either edition, will pay you for your trouble, besides having the satisfaction of knowing that you have aided the BEE JOURNAL to a new subscriber, and progressive apiculture to another devotee.